NIMBUS 4

70-025A-05A

The tapes in this catalog have been released as of 1.27.78.

This data set catalog is for information only.

NIMBUS IV B.U.V.

D#	C#	L#	FILES	TIME SPANS
D-13183	C-10890	5802	19	11/13/70 - 12/26/70 ~~11/13/69 - 6/27/70~~
D-13184	C-10354	5803	43	8/22/70 - 8/27/70
D-13185	C-10355	5805	19	4/20/70 - 4/21/70
D-13186	C-10356	5806	13	4/22/70 - 4/23/70
D-13187	C-10357	5807	7	4/24/70 - 4/25/70
D-13189	C-10358	5809	17	4/28/70 - 4/29/70
D-13190	C-10359	5810	18	4/30/70 - 5/01/70
D-13191	C-10360	5811	3	5/02/70 - 5/02/70
D-13192	C-10361	5812	13	5/04/70 - 5/06/70
D-13193	C-10362	5813	17	5/06/70 - 5/08/70
D-13194	C-10363	5814	17	5/08/70 - 5/09/70
D-13195	C-10364	5815	26	5/09/70 - 5/11/70
D-13196	C-10365	5816	14	5/12/70 - 5/13/70
D-13197	C-10366	5817	22	5/13/70 - 7/29/70
D-13198	C-10367	5818	22	5/16/70 - 5/17/70
D-13199	C-10368	5819	23	5/18/70 - 5/20/70
D-13200	C-10369	5820	17	5/20/70 - 8/04/70
D-13201	C-10370	5821	17	5/22/70 - 5/21/70
D-13202	C-10371	5822	23	5/24/70 - 5/25/70
D-13203	C-10372	5823	16	5/25/70 - 5/25/70
D-13204	C-10373	5824	20	5/28/70 - 5/30/70
D-13206	C-10374	5826	14	5/31/70 - 6/02/70
D-13207	C-10376	5827	21	6/03/70 - 6/04/70
D-13208	C-10375	5828	14	6/05/70 - 6/05/70
D-13209	C-10377	5829	24	6/07/70 - 6/09/70
D-13210	C-10378	5830	24	5/30/70 - 6/11/70
D-13211	C-10379	5831	24	6/13/70 - 6/13/70
D-13212	C-10380	5832	14	6/13/70 - 6/14/70

D#	C#	L#	FILES	TIME SPANS
D-13214	C-10381	5834	21	6/17/70 - 9/08/70
D-13215	C-10382	5835	23	6/19/70 - 6/19/70
D-13216	C-10383	5836	23	6/21/70 - 7/11/70
D-13217	C-10384	5837	20	6/23/70 - 7/04/70
D-13218	C-10385	5838	23	6/25/70 - 6/27/70
D-13219	C-10386	5839	23	6/27/70 - 6/28/70
D-13220	C-10387	5840	23	6/29/70 - 6/30/70
D-13221	C-10388	5841	16	6/03/70 - 7/03/70
D-13222	C-10389	5842	22	7/04/70 - 7/04/70
D-13223	C-10390	5843	21	7/05/70 - 7/06/70
D-13224	C-10391	5844	23	7/07/70 - 7/09/70
D-13225	C-10392	5845	22	7/11/70
D-13226	C-10393	5846	21	7/11/70 - 7/12/70
D-13227	C-10394	5847	7	7/12/70 - 7/13/70
D-13228	C-10420	5849	17	7/17/70 - 7/18/70
D-13229	C-10422	5850	17	7/19/70 - 7/20/70
D-13230	C-10415	5851	20	7/21/70 - 7/22/70
D-13231	C-10417	5852	19	7/23/70 - 7/25/70
D-13232	C-10419	5853	21	7/25/70 - 7/27/70
D-13233	C-10421	5854	20	7/27/70
D-13234	C-10423	5855	12	7/31/70 - 8/01/70
D-13235	C-10889	5856	19	7/31/70 - 8/03/70
D-13237	C-10424	5858	23	8/04/70 - 8/05/70
D-13238	C-10425	5859	22	8/06/70 - 8/09/70
D-13239	C-10426	5860	19	8/08/70 - 8/09/70
D-13240	C-10427	5861	6	8/10/70 - 8/10/70

D#	C#	L#	FILES	TIME SPAN
D-13241	C-10428	5862	41	8/28/70 - 8/31/70
D-13242	C-10429	5863	41	9/01/70 - 9/08/70
D-13243	C-10430	5864	40	9/05/70 - 9/09/70
D-13244	C-10395	5865	35	9/09/70 - 9/12/70
D-13245	C-10431	5866	40	9/12/70 - 12/25/70
D-13246	C-10432	5867	34	9/16/70 - 9/19/70
D-13247	C-10418	5868	18	9/19/70 - 9/21/70
D-13248	C-10412	5869	41	9/24/70 - 9/28/70
D-13249	C-10413	5870	40	9/28/70 - 11/12/70
D-13250	C-10396	5871	40	10/01/70 - 10/05/70
D-13251	C-10397	5872	37	10/05/70 - 10/08/70
D-13252	C-10398	5873	39	10/08/70 - 10/12/70
D-13253	C-10400	5874	40	10/12/70 - 10/12/70
D-13254	C-10401	5875	41	10/15/70 - 10/19/70
D-13255	C-10399	5876	28	10/18/70 - 10/22/70
D-13256	C-10402	5877	40	10/25/70 - 10/30/70
D-13257	C-10403	5878	41	10/28/70 - 11/01/70
D-13258	C-10404	5879	41	11/01/70 - 11/08/70
D-13259	C-10416	5880	43	7/13/70 - 8/15/70
D-13260	C-10405	5881	37	11/12/70 - 11/16/70
D-13261	C-10406	5882	41	11/16/70 - 11/20/70
D-13262	C-10407	5883	21	11/20/70 - 11/23/70
D-13263	C-10408	5884	40	11/25/70 - 11/28/70
D-13266	C-10409	5887	41	12/06/70 - 12/10/70
D-13272	C-10410	8986	37	12/15/70 - 12/17/70
D-13273	C-10411	8987	73	12/23/70 - 12/31/70
D-13275	C-10414	8999	4	11/23/70 - 11/23/70

Problems encountered on the following tapes prevented their processing and therefore were omitted from this data set.

L#	Problem Encountered
5800	Bad input
5802	Bad input
5804	Given to Ray Sears (12/07/70)
5808	Bad input
5814	Tape should have 16 files. Last 3 are EOF's. File 13 doesn't contain Nimbus data.
5821	Orbits and dates on this tape are not sequencial (both orbits and dates are in decending order). This tape contains orbits associated with a previous tape.
5825	Bad input
5833	Tape drive distroyed input tape (D-13213)
5845	Start of tape appears inaccurate. Data does not fit the format.
5857	Tape is physically damaged
5854	Final day does not match format.
5885	Bad input
5886	Bad input
5888	Bad input
5889	Bad input
5890	Bad input
8982	Bad first orbit (extra digit at end)
8984	Given to Ray Sears (12/07/73)
8988	Given to Ray Sears (10/24/73)

Tapes containing the first 15 days of January, 1971 are no good.

1.7.4 BUV Archive Tape Format

The BUV archive tapes stored at the National Space Science Data Center consist of 200 36-bit floating-point binary-word records.

The first and subsequent records will be DATA RECORDS and will be written according to the DATA RECORD FORMAT given in Table 1-7. Each data record will contain data for a BUV instrument wavelength scan, which may refer to backscattered UV measurements, to diffuser plate measurements, or to one of the calibration scans. The scans will be numbered consecutively within each orbit, regardless of their type. Scans not written on the tape will not be assigned a number.

The last record for each orbit will be a SUMMARY RECORD - DOCUMENTATION & HISTORY according to the format given in Table 1-8.

The first word of each record will be a record-type identifier according to the code given in Note 4 of the DATA RECORD FORMAT.

An "end of file" mark will be written after the last record pertaining to a given satellite orbit.

In order to conserve tape space, each physical record on a BUV archive tape shall comprise three 200-word records. If there are an odd number of records for a given orbit, the last 200 words of the last physical record shall consist of -77.0 fill data. Each tape will contain several orbits.

The experiment sensory data is monitored via a 5 sample per second VIP Digital A Channel. In each BUV frame, seven types of data are monitored via the Digital A telemetry. The BUV word definitions are as follows:

a. Photometer Analog Data	BUV Word 1
b. Photometer Housekeeping Data	BUV Word 2
c. Monochromator Analog Data	BUV Word 3
d. Monochromator Housekeeping Data	BUV Word 4
e. Photometer Pulse Count Data	BUV Word 5
f. Monochromator Pulse Count Data	BUV Word 6
g. Monochromator Energetic Particle Data	BUV Word 7

The data and calibration sequences and timing are described in the Nimbus IV User's Guide.

TABLE 1-7

BUV DATA RECORD FORMAT

Word	Units	Contents
1	-	Record type identifier (see Note 6)
2	-	Orbit number
3	-	BUV Scan number within this orbit
4	Days	Day of year at beginning of scan
5	Seconds	Seconds of day at beginning of scan
6	Degrees	Geodetic Latitude at beginning of scan
7	Degrees	Geodetic Longitude at beginning of scan
8	kms	Satellite height at beginning of scan
(See Note 1 re words 9 and 10.)		
9	Degrees	Solar or lunar zenith angle at beginning of scan
10	Degrees	Solar or lunar azimuth angle at beginning of scan
11	Degrees	MUSE solar aspect-elevation or Satellite pitch at beginning of scan
12	Degrees	MUSE solar aspect-azimuth or Satellite yaw at beginning of scan
13	Degrees	Satellite roll at beginning of scan or -99.0 if MUSE data in words 11 and 12.
(MUSE data are to be used in words 11 and 12, when available.)		
14	Volts	Photometer PMT high voltage - 1st value for scan
15	Volts	Monochromator PMT high voltage - 1st value for scan
16	-	Day (0) - Night (2) - Twilight (1) Code
17-29	Same as words 4-16, inclusive, but for end of scan. For words 14-15, second values for scan.	
30	Degrees C	PMT - Temperature
31	Degrees C	Housing Temperature
32	Degrees C	Arm Gradient
33	Degrees C	Housing Gradient
		Average of the 2 values for this scan.
34	Angstroms	Nominal wavelength for data following. (3398 Å for first)
35		Spare.
(See Note 2 re words 36-46.)		
36-39	Amperes	Photometer PMT cathode current for the four values in BUV Word 1.
40	Amperes	Photometer PMT cathode current from pulse count in BUV Word 5.
41-44	Amperes	Monochromator PMT cathode current for the four values in BUV Word 3.

TABLE 1-7

BUV DATA RECORD FORMAT (Continued)

45	Amperes	Monochromator PMT cathode current from pulse count in BUV Word 6.
46	- counts	Number of pulse counts in BUV Word 7 (-99.0 if no BUV Word 7 for this wavelength).

47-59, 60-72, . . . , 177-189, same as 34-46, but for remaining wavelengths in order 3312, 3175, . . . , 2555Å. These word blocks are referred to as λ - blocks 1 through 12, respectively.

Sub-Record for MCSA calibrations

	Units	Quantity
190	Amperes	Mean of the 12 photometer PMT cathode currents given in BUV Word 1 in λ -blocks 4, 5, and 6, incl.
191	Amperes	Standard deviation of quantities used to obtain preceding mean.
192	Amperes	Mean of the 4 photometer PMT cathode currents in BUV Word 5.
193	Amperes	Standard deviation of quantities used to obtain preceding mean.
194-197	Same as words 1-4,	but for monochromator data (BUV Words 3, 6)
198	-	Mean of 2 pulse counts in BUV Word 7 in λ -blocks 3 and 5. (This mean is subtracted from pulse count total in BUV Word 7 in λ -block 7 before these latter counts are accumulated for the statistics in the header record.)

Sub-Record for MCSD calibrations

190	Ångstroms	Apparent position of Hg2537 Å line computed from BUV Word 3 data in λ -blocks 5, 6, 7, 8.
191	Ångstroms	Apparent position of Hg2537 Å line computed from BUV word 6 data in λ -blocks 5, 6, 7, 8.
192	Amperes	Central Intensity from BUV Word 3 calculation
193	Amperes	Central Intensity from BUV Word 6 calculation

(1) If words 9 and 10 refer to lunar values (re sub-satellite point on dark side of terminator), 1000 shall be added to the zenith angle and azimuth.

TABLE 1-7

BUV DATA RECORD FORMAT (Continued)

(2) If data are not available for the Nimbus major frame corresponding to one-half of a scan, the corresponding cathode currents are given as -99.0 in words 36-46, 49-59, . . . , 179-189. If the corresponding PMT is not in high gain mode, words 40 or 45 (etc.), shall be given as 0.0; if the photometer or monochromator pulse counter has overflowed, words 40 or 45 (etc.), respectively, shall be given as -999.0.

(3) When Electrometer data word is full scale, value is set = -999

(4) When Electrometer data word is zero, value is set = 000

(5) Data for a scan are not processed or written on the BUV archive tape if:

(a) BUV power is off for both major frames of the scan, OR

(b) there is loss of SYNC for both major frames of the scan.

(6) Record type identifiers are as follows:

Record Type	Word 1 of Record
SUMMARY RECORD	-111.0
MCSA DATA RECORD	-222.0
MCSB, C DATA RECORD	-333.0
MCSD DATA RECORD	-444.0
DIFFUSER PLATE DATA RECORD	-555.0
BACKSCATTERED UV DATA RECORD	-666.0
MCSE DATA RECORD	-777.0

(7) In the calibration scans, part of the data do not apply to the calibration per se. However, since these "irrelevant" data may be useful in monitoring instrument performance, they are written on the tape in the usual way, taking account of Note 2 above.

(8) Spare locations, including those of words 190-200, which may not be used for a particular type of record, are filled with -77.0.

(9) In normal data records only, words 190-192 will contain the spacecraft velocity components $\dot{x}$, $\dot{y}$ and $\dot{z}$.

TABLE 1-8

BUV SUMMARY RECORD-DOCUMENTATION & HISTORY

Word	Unit	Contents
1	-	Record Type identifier = -111.0 (see list).
2	-	Satellite ID = 4 for Nimbus 4.
3	-	Orbit number
4	Days	Day of year orbit begins
5	Seconds	Second of day orbit begins
6	Days	Day of year orbit ends
7	Seconds	Second of day orbit ends
8	Volts	Mean value of analog housekeeping +4 Volt Monitor for orbit
9	Volts	Standard deviation of quantities used to get mean in word 8
10	Volts	Minimum value
11	Volts	Maximum value
12	-	Number of quantities in data sample
13-17	Volts	As 8-12 above, but for -6.375 Volt Monitor
18-22	Degrees C	As 8-12 above, but for Housing Absolute Temp.
23-27	Degrees C	" " Photomultiplier Tube Temp.
28-32	"	" " Sensor Module Electronics Temp.
33-37	"	" " Motor Current Limiter Temp.
38-42	"	" " Static Inverter I Temp.
43-47	"	" " Static Inverter II Temp.
48-52	"	" " Arm Temp Gradient
53-57	"	" " Housing Temp. Gradient
The following words 58-142 are derived from MCSA sub records:		
58	Amperes	Average photometer PMT dark current (cathode) from BUV Word 1.
59	Amperes	Standard Deviation of quantities used to get this average.
60	Amperes	Minimum value
61	Amperes	Maximum value
62	-	Number of quantities in data sample.
63-67	Amperes	As 58-62 above, but for data obtained from BUV Word 5.
68-72	"	" " Word 3
73-77	"	" " Word 6
78-82	Counts	As 58-62 above, but for data obtained from BUV Word 7.(100Hz pulses at 2 times High Level Discriminator threshold.)

TABLE 1-8

BUV SUMMARY RECORD-DOCUMENTATION & HISTORY (Continued)

83-87	Counts	As 58-62 above, but for data obtained from BUV Word 5 (125KHz pulses at 0.5 times High Level Discriminator threshold.)
88-92	Counts	As 58-62 above, but for data obtained from BUV Word 6 (125KHz pulses at 0.5 times High Level Discriminator threshold.)
93-97	Counts	As 58-62 above, but for data obtained from BUV Word 5 (125KHz pulses at 2 times Low Level Discriminator threshold.)
98-102	Counts	As 58-62 above, but for data obtained from BUV Word 6 (125KHz pulses at 2 times Low Level Discriminator threshold.)
103-107	Amperes	As 58-62 above, but for last 3 BUV Word 1's (constant current 9×10^{-11} amperes, photometer PMT low gain.)
108-112	Amperes	As 58-62 above, but for last 3 BUV Word 1's (constant current 9×10^{-11} amperes, photometer PMT high gain.)
113-117	Amperes	As 58-62 above, but for BUV Word 3's (constant current 9×10^{-11} amperes, monochromator PMT low gain.)
118-122	Amperes	As 58-62 above, but for BUV Word 3's (constant current 9×10^{-11} amperes, monochromator PMT high gain.)
123-142	Amperes	Same as 103-122 but for constant current calibration 5×10^{-10} amperes
143	-	Number of MCSB, C calibrations this orbit
144	-	Number of MCSD calibrations this orbit
145	-	Number of diffuser plate scans this orbit
146	-	Time of ED/EN Terminator
147-200	Spare, use -77.0 as fill	